

WHAT WE LOSE

when we buy and dry



Over the next thirty years, Colorado’s valuable land and water resources will become more precious than ever. With an exploding population combined with the trend toward the aging and retiring of agricultural producers, will we find a way to ensure that we protect what matters most?

FACING DEMAND CHALLENGES

Anyone living in Colorado understands that water quantity and quality demand a lot of attention from users and governments alike. Our climate is designated semi-arid, meaning we receive an average of 15-25 inches of precipitation statewide annually. Even our wettest areas only receive an average of 40 inches of precipitation each year, which is drier than the average of almost every state east of the Mississippi River.

The total amount of water that originates within Colorado averages 13.7 million acre-feet per year. Nearly two-thirds of this water flows downstream to other states who have claims on it. Colorado’s residents and governments “own” about 40% of the

water that falls as precipitation here – about 5.3 million acre-feet. An acre-foot of water equals the volume of liquid one acre in area and one foot deep, or 325,851 gallons. The average American home consumes about 0.5 acre-feet per year.

Of those 5.3 million acre-feet, 89% is used by agricultural producers, 7% by municipalities, and 4% by large industries.¹ But based on population projections over the next three decades, that allocation could be in flux. The State Demographer’s Office estimates that our population could reach over nine million people by 2050, a significant increase over our current population of 5.3 million.

Water conservation efforts among municipal users have reduced demand by an impressive 20% per capita since 2000. Some of this is attributed to adoption of

1 Colorado Water Plan.



water-saving appliances, some to lawn watering restrictions, some to personal conservation habits. But these efforts won't solve the inevitable problem of more population and associated demand.

Experts expect our state to face a deficit of 500,000 acre-feet annually by 2050². All that water has to come from somewhere, and agricultural water rights are the obvious target to meet those rising demands. For reference, 85% of our population lives east of the Continental Divide, but 80% of the water falls west of it.

A PRIMER ON WATER RIGHTS IN COLORADO

To understand how water is allocated and managed in Colorado, one must first have a basic understanding of how water rights are awarded and defended.

When Colorado was being settled by European trappers, miners and settlers, they quickly discovered that land far away from rivers or irrigation would be largely useless for settlement and development purposes. These early settlers devised a custom for allocating water that we still use today, which essentially amounts to first come, first use, first served.

The first miner to use water from a stream therefore kept the rights to use that amount of water. Those who arrived later could only use water that someone hadn't already spoken for, whether for mining, irrigating, or any other purposes. We now call this practice the appropriation doctrine, with the only caveat being the water has to be put to a beneficial use when diverting it from its source.

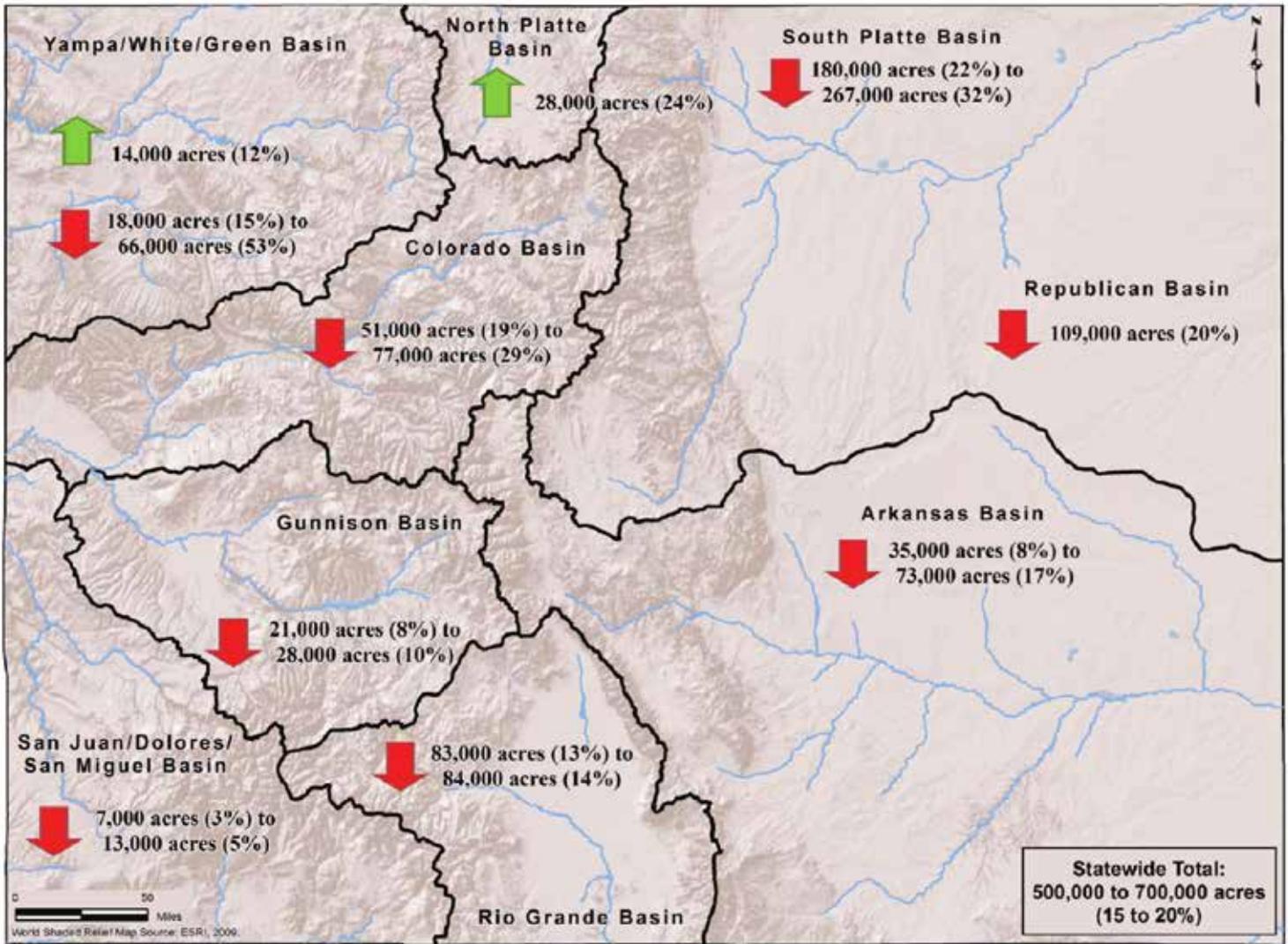
Under this practice, the most senior rights are the most valuable. For an extremely simplified

2 B. Jackson. "Leasing water - a novel idea to combat "buy and dry" in Colorado."

FIGURE 6.2-1

POTENTIAL CHANGES IN IRRIGATED ACRES BY 2050⁷⁴

(↑ = increase in irrigated acres; ↓ = decrease in irrigated acres)



Colorado's Water Plan, 2015

example, if Person A has a senior water right to 500 acre-feet in a year, and Person B has a more junior right to 600 acre-feet, but the river only produces 800 acre-feet one year, Person A gets all 500 (as long as it is applied to beneficial use) and Person B gets only 300 acre-feet. This practice applies to surface water (the visible water in lakes, rivers, streams, etc.) and groundwater tributaries.³

Every possible drop of water that may fall is owned or claimed by someone for use in Colorado or other states. In fact, similar to airlines that overbook flights, rights and claims to water exist far beyond actual flows. This is possible through

senior users not using their full allotment, or more junior rights simply going unfulfilled.⁴

One way or another, all the water in Colorado gets put to use.

LESSONS LEARNED FROM CROWLEY COUNTY

So what happens when a municipality has more people than water? The people in charge turn to those who do have water – our state's farmers and ranchers. At \$5 billion in annual earnings, and covering about half of our state's land area,

3 Water Information Program. "Colorado Water Rights."

4 D. Owen. "Where the River Runs Dry."

agriculture is an enormous driver of the Colorado economy. That doesn't mean, however, that farmers and ranchers are necessarily wealthy. The USDA reported that in 2017, the average Colorado farm netted only \$37,271 in revenue.⁵

In fact, the most significant asset of many farmers is the value of their land and water rights. And for some, they might consider their land and water as their personal version of a 401k. According to the USDA Ag Census, the average Colorado farmer was aged 53.3 years in 1997, but by 2012, that average had risen to 58.9 years. Knowing how valuable water rights can be in this state, in some cases, selling water rights may be a land owner's best or only option for a comfortable retirement. Water rights in Colorado can sell for over \$10,000 per acre-foot, and some farmers own hundreds.⁶

Enter the eager buyer – Front Range municipalities with exploding populations. The practice is colloquially known as “buy and dry:” buy land for

the water rights, and divert the water elsewhere, leaving the land unirrigated and vacant. Colorado water managers report that to date, cities have dried up millions of acres of farms and ranches already, purchasing almost 200,000 acre-feet of associated ag water. They estimate a loss of up to 700,000 additional acres of [irrigated or working] land by 2050.⁷

So what happens in a farming community when the water is gone? One only need look to Crowley County, lying just east of Pueblo County, and can be viewed as a cautionary tale for the rest of the state's agricultural centers.

In the 1970s, Crowley County had 50,000 irrigated acres of land. Farmers grew cantaloupe, tomatoes, onions, corn, and wheat.⁸ Then the municipalities came calling. Colorado Springs, Aurora, Pueblo, Fountain, Woodland Park, and other municipalities purchased 92.5% of the irrigated acres in Crowley County by 1980.⁹ Today, the county has only 2,500

5 United States Department of Agriculture. “2017 State Agriculture Overview.”

6 M. Verlee. “Thirsty Cities, Dry Farms: Park 1 - Buy and Dry.”

7 J. Zaffos. “Can leasing irrigation water keep Colorado farms alive?”

8 M. Goodland. “Buying and Drying: water lessons from Crowley County.”

9 B. Devine. “Moving Waters: The Legacy of Buy-and Dry and the Challenge of Lease-Following in





Ordway Main Street. By Jeffrey Beall - Own work, CC BY 4.0, <https://commons.wikimedia.org/w/index.php?curid=59712271>

irrigated acres remaining made up of fewer than twenty distinct farms.¹⁰ And the effects are being felt by everyone left behind from the sell-off.

ECONOMIC EFFECTS IN CROWLEY COUNTY

When a county's tax base is largely dependent on tens of thousands of acres of productive agriculture, removing water from land can send the county's tax base into a tailspin. It's estimated that the Lower Arkansas Basin lost "over \$5 million in private income and over \$500,000 in government revenues from water sales to several water providers in the Front Range Urban Corridor."¹¹ The same area continues to feel the reverberating economic effects forty years later, having lost 1,557 residents since 2010 and 698 jobs since 2011.¹²

But when the farms go away, so do all of the people and industries that support agriculture. Small

businesses that offer farm equipment, seed, and professional services (such as legal services and banking) all suffer when farms leave en masse, as do the hired laborers who pick the crops and plow the fields. Property taxes are affected with the initial sale, and then sales taxes are affected when the lack of agricultural economic activity "trickles down." The effect reverberates through the economy when a major industry is removed. Main streets in Crowley County are now largely vacant, the mom and pop shops and cafes having to had move on as well.¹³

Desperate for jobs and a tax base, the county courted prisons and now operates a privately run and publicly run correctional facility. Now 46% of the residents and over half the county's tax revenue come from those two institutions.¹⁴

Brian Devine interviewed Crowley County

Colorado's Arkansas River Basin."

10 Ibid.

11 Ibid.

12 J. Zaffos. "How a plan to save southeastern Colorado went off the rails."

13 Ibid.

14 Ibid.

residents for his thesis, titled “Moving Waters: The Legacy of Buy-and-Dry and the Challenge of Lease-Fallowing in Colorado’s Arkansas River Basin” and found one resident that had this to say:

“[Y]ou had farmers who are buying trucks, tractors, fertilizer, seed; when they’re buying that they’re paying taxes on it and creating jobs and jobs and you have taxes from jobs; those guys are going out to restaurants, spending money on the restaurants.”

But that is no longer the case.

ENVIRONMENTAL EFFECTS IN CROWLEY COUNTY

The negative outcomes of buy and dry of course aren’t limited to a community’s economics. Once water is removed from irrigated land, the land is never the same. One might think that the land would naturally restore itself to what it was before human settlers arrived– sweeping grass prairies – but that isn’t the case. After a 100-plus years of irrigation, the ecosystems of the grasses and soils have been significantly disrupted and it can be easy for non-native weeds to dominate. Naturally occurring rainfall doesn’t produce enough moisture to provide ground cover. That means resulting wind erosion to the point where a new Dust Bowl isn’t out of the question.

Residents of Crowley complain about the dust – it’s a fact of life now. It clogs the gears and workings of farm implements and irrigation channels. Residents have to rent bees to pollinate the fields because of the lack of viable habitat to sustain pollinator populations in such areas.¹⁵

15 Ibid.





Another individual quoted in Mr. Devine's thesis says,

“[W]e have this pattern now of dry, dry, little rain, fields, acres, thousands of acres with thistles and other weeds that will break off and then blow, which then fill our windbreaks, our buildings, our driveways, our fencerows, our ditches.”

AN ALTERNATIVE TO BUY AND DRY

What if there were another way? A way for farmers to continue to make money from their land instead of taking out the value all at once? A concept that is gaining steam in the conservation and water communities is called the Alternative Transfer Mechanism, or ATM.

One form of an ATM is a long-term lease between the owner of a water right and a municipality. A lease can be entered into on an individual basis or as part of a consortium. Each ATM is unique, but the common basis is an agreement for a farmer or rancher to lease water to cities during drier years and keep the water in wetter ones. This may seem counterintuitive, but it's primarily in the drought years when the cities need the water most, and farming is already more difficult in those years. It truly makes sense for both parties.

A lease might specify that a municipality has the right to use the water three years out of ten. In those three years, the farmer will fallow (not irrigate) the fields and the water associated with that land will be diverted to the municipal lease holder. The land may still be planted with a cover crop that requires very little water, in order to reduce erosion. An ATM may be negotiated with a group of farmers along a particular ditch system, so that fallowing can be strategically implemented in a rotation to minimize the effect to the land.

As far as economic effects go – instead of taking a one-time payout that may or may not last through retirement, the farmer or rancher gets a steady source of income – whether they are farming or leasing water – maintaining the tax base and economic viability of their community. During dry years, instead of potentially taking a loss for a poor-yield crop, the farmer accepts a lease payment, and may continue to invest that payment in farm equipment and supporting services that keep the agricultural economy alive.

The Colorado Water Plan identified a goal of transferring 50,000 acre-feet of agricultural water to municipalities by 2030 through Alternative Transfer Methods.

Casey Davenport, Executive Director of the Colorado Watershed Assembly, commented, “Socially conscious and community minded Coloradoans are hard at work to develop viable alternatives to what we’ve come to know as ‘buy and dry’. It’s not simple, but it is essential that we learn from our experience and not repeat mistakes of the past. When we permanently take irrigation off our landscape we don’t just lose agricultural production; we can actually lose the land. We have to advance innovative technical and political solutions like Alternative Transfer Mechanisms that protect our traditions, rural economies and our beautiful landscape.”

But buy and dry continues in many places statewide.

In 1986, the City of Thornton bought 35,500 acre-feet of water and the associated 70 farms, all located in Weld and Larimer counties. The purchase price was \$60 million.¹⁶

Since that time, one can clearly see the difference between land still irrigated and land that has dried up. The vacant land is essentially unusable for future agriculture - once the water is gone, it can’t come back.

Weld County and other counties along the South Platte River are particularly vulnerable to buy and dry with their rich water resources. Water that provides critical bird and fish habitat. Water that sustains the surrounding farms.

The Greeley Tribune reports that even though the Weld County population has grown overall, the communities that used to be agricultural centers, such as Pierce, have dropped 5% in population from 1980 to 2010. Nearby Ault has seen the town’s grain elevator close.¹⁷

COLORADO OPEN LANDS’ APPROACH

We at Colorado Open Lands have embraced ATMs as a way to strike a balance between inevitable population growth and conservation. Our philosophy isn’t anti-growth - we know our state offers an unmatched quality of life for people to live, work, and play. We simply wish to play a role in making sure that Colorado stays as great as it can, while we still have the chance.

Towards that end, we have been working with landowners interested in ATMs, helping guide them through the process of making the most of their assets, while protecting their farm or ranchland at the same time. We look forward to sharing the results of that work as they become available.

16 The Tribute Editorial Board. “There are no easy answers to buy-and-dry in Colorado, but storage, conservation and conversation are key.”

17 Ibid.

Further, we have co-authored Colorado's definitive guide to the why and how of ATMs. We convened a group of water and conservation experts and lawyers to write this manual, titled "Sharing Water to Save the Farm: A Guide to Agricultural-Municipal Water Sharing for Colorado's Land Conservation Community."

You can find this guide at
ColoradoOpenLands.org/Other-Publications

FINAL THOUGHTS

In this piece, we've made the claim that water is Colorado's most precious resource. But perhaps something just as valuable is time. To borrow a phrase, the best time to conserve land and water - whether through encumbering rights in a conservation easement or shoring them up in a long-term ATM - is fifty years ago. The second best time to conserve land and water is now.



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